AMSAT News Service Weekly Bulletins
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SB SAT @ AMSAT $ANS-285.01
AMATEUR RADIO ON ISS
HR AMSAT NEWS SERVICE BULLETIN 285.01 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.01

This past week, the following ground breaking announcement was made to the international delegates that comprise the current Amateur Radio on the International Space Station (ARISS) team:

"Dear Delegates:

Our joint collaboration at the ARISS International Conference last November was extremely successful. The signed Memorandums of Understanding representing our combined commitment to develop a single, coordinated amateur radio station on ISS were presented to the top ISS officials.

NASA HAS GIVEN US A COMMITMENT. AMATEUR RADIO IS NOW AN OFFICIAL PAYLOAD OF THE INTERNATIONAL SPACE STATION".

For the past few years, the SAREX Working Group and last November the ARISS-International team, have met with members of the International Space Station (ISS) Program Office to gain acceptance of amateur radio on the space station. These efforts, as well as discussions held this past month with ARISS team member Matt Bordelon, KC5BTL, and the ISS Payloads Office at the Johnson Space Center in Houston, have led to the following plan for amateur radio on ISS.

The plan is divided into three distinct capabilities.

1. First, the delivery of a transportable amateur radio station. With the first crew scheduled to arrive in January 1999 for a 5 month stay. It must provide the basic capabilities that will allow the crew to establish voice and packet contacts with friends, family, school groups and other amateur radio operators.

It must be capable of operating from within the Russian Service Module, a module with good Earth visibility and the primary crew residence during the early part of the assembly sequence.

2. External pallets will provide the second capability and location for amateur radio equipment. The EXPRESS pallets, located on the S3 (starboard) truss segment, are a perfect location for potential repeater and microsat-type payloads. These pallets, which are due to arrive on ISS-UF4 in January 2002, have power, thermal, and telemetry connections. They also have good Earth visibility. Each pallet will be installed robotically.

3. The permanent station will provide the third distinct capability. This permanent station is expected to house the most complete amateur radio station with the greatest functionality. The U.S. Habitation Module, currently scheduled for delivery sometime in 2002, will have good Earth visibility and plenty of feedthroughs for external antennas. During the international partners meeting in Houston, the team agreed that this station should include slow scan TV, fast-scan TV, packet, voice, and experimental modes. Moreover, the plan is for the station to include several frequency bands and modes (SSB & FM) and have the ability to interface with the ISS audio and video subsystems.

AMSAT-NA Vice President for Manned Space Programs, Frank Bauer, KA3HDO, announced: "This is truly a monumental decision which will solidify the future of amateur radio on manned space vehicles". He continued, "As our

space explorers occupy the international space station and eventually
venture to worlds beyond, amateur radio will continue to provide the
adventures of space flight directly to radio amateurs, students and the
general public on Earth".
When he learned of the decision to make amateur radio an official payload
on ISS, Joerg Hahn, DL3LUM, from the German SAFEX team stated: "Thank you
for your very POSITIVE mail...these are very stimulating news...it is a
good sign to know that the ham activities will be an official part of ISS".
Like the current SAFEX, MAREX, MIREX and SAREX programs, the ARISS
international partners are striving to develop an amateur radio station
that will enable experimentation, promote interest in amateur radio, and
spark student's interest in the science and technology fields. The ARISS
team includes members from Great Britain, Germany, Italy, France, Japan,
Russia, Canada and the United States.
Stay tuned to future ANS bulletins as the hardware concepts from the
international partners solidify into a preliminary design.
For more information on the International Space Station and the planned
assembly sequence, see: http://station.nasa.gov/station/assembly
[ANS thanks  Frank H. Bauer, KA3HDO, of the SAREX Working Group
for this report.]
/EX
SB SAT @ AMSAT  $ANS-285.02
W3XO HONORED
HR AMSAT NEWS SERVICE BULLETIN 285.02 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.02
AMSAT NA President Bill Tynan, W3XO, has been elected a Fellow
of the Radio Club of America. Bill is scheduled to receive his award
at the Club's annual dinner, to be held November 21 in New York.
The Radio Club of America, founded January 2, 1909, is the world's
oldest radio communications society. The Club provides grants in aid
to educational institutions and other worthy causes related to radio
communications, as well as sponsoring technical meetings and publishing
a journal, Proceedings. Its membership includes many leaders in amateur,
commercial and government communications. Bill has been a member of
the Club since 1992.
[ANS thanks Ray Soifer, W2RS, for this report.]
/EX
SB SAT @ AMSAT  $ANS-285.03
STS-87 KEPS
HR AMSAT NEWS SERVICE BULLETIN 285.03 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.03
Below is the nominal State Vector and Keplerian Elements for
STS-87. The vector data comes from NASA; the Keplerian Elements
were computed from the vector.
This file may be read by VEC2TLE version 9648 to update your
Keplerian Elements text file.
Vector format = 10117
Satellite Name: STS-87
Catalog Number: 99987
Epoch MET: 0.03001030093
0/00:43:12.890 MET
EFG E: 9732372.589 ft
F: 17189716.790 ft
G: -9361179.872 ft
Edot: -21474.160303457 ft/s
Fdot: 9266.878065107 ft/s
Gdot: -5300.822941406 ft/s
ndot/2 (drag): 0.00040121794 rev/day^2
nddt/6: 6.72842E-09 rev/day^3
Bstar: 8.95827E-05 1/Earth Radii

Elset #: 1
Rev @ Epoch: 1.67780888922
Launch scheduled: 19-NOV-97 / 19:47 UTC
Note that "99987" is a temporary Catalog Number for STS-87. Once
STS-87 is launched, a permanent Catalog Number and International
Designator will be assigned.
The following Keplerian elements were computed by VEC2TLE from this
vector, and the scheduled launch time using a 1.0 drag multiplier:
STS-87
1 99987U 97323.85431586 .00040122 67284-8 89583-4 0 11
2 99987 28.4670 185.9357 0002865 329.1052 274.9205 15.96550274 16
Satellite: STS-87
Catalog number: 99987
Epoch time: 97323.85431586
Element set: 1
Inclination: 28.4670 deg
RA of node: 185.9357 deg
Eccentricity: 0.0002865
Arg of perigee: 329.1052 deg
Mean anomaly: 274.9205 deg
Mean motion: 15.96550274 rev/day
Decay rate: 4.01218e-04 rev/day^2
Epoch rev: 1
Checksum: 328
VEC2TLE may be downloaded from:
http://www.amsat.org/amsat/sarex/orbit.html
[ANS thanks Ken Ernandes, N2WWD, for this information.]
 /EX
SB SAT @ AMSAT  $ANS-285.04
2-METER ACTIVITY ON MIR
HR AMSAT NEWS SERVICE BULLETIN 285.04 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.04

During the Month of October 97, there may be a few times when the Amateur
Radio equipment on board the MIR space stations is temporarily shutdown..
The new crew is very busy storing the tons of supplies delivered by the
STS-86 Shuttle last week. Also, a new cargo Progress rocket is schedules
to fly the first week of October, with even more supplies, including a
scale model of the Sputnik Satellite.
Reasons for Temporary shutdowns of the Amateur Radio 2-meter Station
1. Crew is Busy: Amateur Radio is not their Primary Mission
2. Docking/undocking: When there is a planned Docking or Undocking of
any module, all un-used radio equipment is turned of for the duration of
the docking/undocking cycle.
3. Power rationing: Some experiments require a large amount of power.
Low priority experiments such as the Amateur Radio station will sometimes
get turned off for a few hours.
4. Using the PMS: It is easier to edit the mail in the PMS mail box,
when the radio is off, and the crew member can concentrate on replying to
mail sent over the PMS.

Help out the crew my limiting your Packet access:
For the month of October, lets try to voluntarily limit the our use of the
PMS mail to the suggestions below. We do not want to over load the crews
by sending hundreds of messages and asking for e-mail replies. The crews
do not have very much free time to spend at the keyboard answering mail.

1. Keep your messages short (there is only 13k of mail storage)
2. Send your message as a one way messages, such as , Greetings,
Introductions, etc. and do not try to ask questions requiring a reply.
3. Don't complain if you do not get any mail from the crew.
Voice operations:

More than one astronaut / cosmonaut has told me the do not like to work voice, because the crowds to not wait for their turn. The Crew members are NOT CONTESTERS! When the crew is on voice, do the following:
1. Listen for CQ
2. Listen for CQ
3. The crew members like to chat for 3-8 minutes per person. If you are listening, you must wait for the CQ from the crew member before you transmit.
4. Do not transmit until the crew member has completely signed with the ground station, example, ?Thank you very much, this is KC5VPF clear with NA1UZN, CQ/QRZ?
5. Do not bother the crews about QSL cards. N6CO is the QSL manager for all Russian and America crew members living on MIR. Note, N6CO does not do QSL for Shuttle, nor for other guests on MIR.
[ANS thanks Miles Mann, WF1F, for this update.]
/EX
SB SAT @ AMSAT  $ANS-285.05
RS-17 INFO
HR AMSAT NEWS SERVICE BULLETIN 285.05 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.05
The Sputnik 1/3 scale, PS-2, will be RS-17 when released,
 according to sponsor's web page. Listen on 145.82 FM
 (145.80-145.85 for doppler?). Date of release has again been pushed back to November 3rd, during the next EVA (spacewalk) from MIR.
[ANS thanks Philippe Mondon, FR5DN, for this information.]
/EX

SB SAT @ AMSAT  $ANS-285.06
WEEKLY SATELLITE REPORT PT 1
HR AMSAT NEWS SERVICE BULLETIN 285.06 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.06
MIR
Simplex 145.985 MHz, FM
Dave Wolf has been active over Europe on phone.
He just called CQ but wasn't able to pick-up any callsign back.
Then he quickly announced that he had to turn off amateur radio since the beginning of communications with the control center.
[ANS thanks Alain De Carolis,  IW6PBC, for this report.]
SAFEX, MIR 70 cm Repeater
(Uplink 435.750 MHz FM, Downlink 437.950 MHz FM,
Subaudible tone 141.3 Hz)
Not operational at this time.
RS-10
(Uplink 145.865-145.905 MHz CW/SSB, Downlink 29.36-29.4 MHz CW/SSB)
RS-10 Still silent.
RS-12
(Uplink, 145.91-145.95 MHz CW/SSB, Downlink 29.41-29.45 MHz .)
Operational, now in mode A. Some distortion has been report on the downlink this week.
RS-15
(Uplink 145.858-145.898 MHz CW/SSB, Downlink 29.354-29.394 MHz CW/SSB)
Operational.
(Hint: If SSB doesn't work for you, try CW. CW is very easy to hear on the downlink!)
RS-16
Transponder information on RS-16.
Uplink = 145.915 - 145.948 MHz
Downlink = 29.415 - 29.448 MHz
Beacons = 29.408 , 29.451 MHz
Pwr 29 MHz Down = 1.2 W /4 W

Beacon 1 = 435.504 MHz
Beacon 2 = 435.548 MHz
Pwr 435 MHz Beacons = 1.6 W
FO-20
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9
MHz CW/USB)
Operational. FO-20 in mode JA continuously.
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]
KO-23
(Uplink 145.85, 145.9 MHz FM, Downlink 435.175 MHz FM,
9600 Baud FSK.)
KO-23 operating normally with downlink efficiencies returned to >90%.
[ANS thanks Jim Weisenberger, AA7KC, for this report.]
KO-25
(Uplink 145.980 MHz FM, Downlink 436.5 MHz FM,
9600 Baud FSK.)
KO-25 operating normally
[ANS thanks Jim Weisenberger, AA7KC, for his reports on
KO-25.]
AO-27
(Uplink 145.85 MHz FM, Downlink:
436.792 MHz FM .)
Operational. It may be turned back to digital mode sometime Sunday 05-Oct.
[ANS thanks Michael Wyrick, N4USI, AO-27 Control-op, for this update.]
FO-29
Voice/CW Mode JA
(Uplink 145.9-146.0 MHz CW/LSB, Downlink 435.8-435.9 MHz CW/USB)
Digital Mode JD
(Uplink 145.85, 145.87, 145.910 MHz FM, Downlink 435.910 MHz FM 9600
baud BPSK)
Operational.
[ANS thanks Kazu Sakamoto, JJ1WTK, for this report.]
/EX
SB SAT @ AMSAT $ANS-285.07
WEEKLY SATELLITE REPORT PT 2
HR AMSAT NEWS SERVICE BULLETIN 285.07 FROM AMSAT HQ
SILVER SPRING, MD, OCTOBER 12,1997
TO ALL RADIO AMATEURS BT
BID: $ANS-285.07
AO-10
(Uplink 435.030-435.18 MHz CW/LSB, Downlink 145.975-145.825 MHz
CW/USB)
Operational,. AO-10 still has strong signals but occasional deep
fading during a perigee pass over the southern US on 9/30/97 at about
3500 miles using only a 3 element linear polarized 2m yagi without
preamp. For now AO-10 looks like its workable from some less elaborate
stations.
[ANS thanks Jim Dawdy for this report.]
OSCAR-11
(Downlink 145.825 MHz. FM, 1200 Baud PSK. Beacon 2401.500 MHz..)
Operating normally.
OSCAR-11 users are welcome to visit Clive's web site. It contains some
software for capturing data, and decoding ASCII telemetry and WOD.
There is an archive of raw data (mainly WOD) for analysis, which is
continually being expanded, as new data is captured. The URL is -
http://www.users.zetnet.co.uk/clivew/
[ANS thanks Clive Wallis, G3CWV, for this information.]
AMSAT-OSCAR-16 (PACSAT)
(Uplink 145.9, 145.92, 145.94, 145.86 MHz FM, 1200 bps Manchester FSK
Downlink 437.0513 MHz SSB, 1200 bps RC-BPSK 1200 Baud PSK.
Beacon 2401.1428 MHz.)
Operating normally.
Uptime is 1119/06:34:11. Time is Sat Oct 11 12:00:51 1997
Bat 1 Temp 2.419 D Bat 2 Temp 3.024 D

Baseplt Temp 4.234 D RC PSK BP Temp 1.814 D
RC PSK HPA Tmp 1.814 D +Y Array Temp -2.422 D
PSK TX HPA Tmp 1.209 D +Z Array Temp 16.336 D
RC PSK TX Out 0.428 W
Total Array C= 0.305 Bat Ch Cur=-0.004 Ifb= 0.041 I+10V= 0.272
TX:010B BCR:85 PWRC:59E BT:3C WC:25 EDAC:13
Graphic information about WOD/Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/wod.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]
DO-17(DOVE)
( Downlink 145.825 MHz FM, 1200 Baud AFSK.
Beacon 2401.220 MHz.)
DOVE has returned to 2 meters.
For those operating JOTA the weekend of October 25 you may want to take your packet gear and attempt to copy DOVE (DO-17) on 145.825 MHz. DOVE will be transmitting a greeting to JOTA operators from about Oct. 15th through about Oct. 23rd. Transmissions will be 1200 baud packet and standard packet equipment can demodulate this signal. The signal will not be strong, the satellite will be transmitting about .8 watts day and night. The Dove command team would suggest a small beam if you want to assure success. The message will be transmitted about every 60 seconds along with telemetry, and will be in ASCII text.
[ANS thanks Jim White, WD0E, for this update.]
WEBERSAT (WO-18)
(Downlink 437.104 MHz SSB, 1200 Baud PSK AX.25.)
No report available.
LUSAT-OSCAR-19
(Uplink 1200 bps Manchester FSK Uplinks:
145.84, 145.86, 145.88, 145.9 MHz FM, Downlink 437.125  MHz SSB,
1200 bps RC-BPSK.)
Operating normally.
Uptime is 843/21:54:00. Time is Sat Oct 11 11:59:10 1997
Bat 1 Temp 1.252 D Bat 2 Temp 1.252 D
Baseplt Temp 0.692 D RC PSK BP Temp 4.057 D
RC PSK HPA Tmp 5.740 D +Y Array Temp -3.796 D
PSK TX HPA Tmp 2.935 D +Z Array Temp -2.113 D
RC PSK TX Out 0.986 W
Total Array C= 0.159 Bat Ch Cur=-0.041 Ifb= 0.075 I+10V= 0.158
TX:01A BCR:80 PWRC:36E BT:3C WC: 0
Graphic and general information about Telemetry values can be found at:
http://www.arrakis.es/~ea1bcu/lo19.htm
[ANS thanks Miguel A. Menendez, EA1BCU, for this report.]
UO-22:
(Uplink: 145.9 or 145.975 MHz FM. Downlink 435.120 MHz FM
9600 Baud FSK.)
UO-22 is operating normally.
Chris Jackson, G7UPN / ZL2TPO, has reloaded the Store and Forward communications task on the UO-22 On-Board Computer. This task includes incremental checksums which should make uploading slightly faster.
In the old task, once an upload was complete, the spacecraft had to perform the checksum on the complete file. Depending on the file length, this could take quite a long time. With the new task, the checksum is computed on the fly - while the data is actually being uploaded. Thus there is no need to recompute it at the end of the transfer and this checksum delay is then removed.
However, all files that were started before Chris Jackson, G7UPN / ZL2TPO, loaded the task around 1000 UTC on the 19th will receive a corrupt body checksum error when the upload is completed. If the file is uploaded again, it should be accepted. If trying to upload a large file that was started before the above time, then start again.
If anyone gets persistent body checksum errors while uploading files to UO-22 would they please let Chris Jackson know as soon as possible
[ANS thanks Chris Jackson, G7UPN / ZL2TPO,
Groundstation and Operations Manager, for this report.]

IO-26 ( ITAMSAT)
Uplink 145.875, 145.9, 145.925, 145.95 MHz FM, Downlink 435.822 MHz SSB,
1200 Baud PSK.)
The actual beacon is:
 26th September 1997  Happy birthday ITAMSAT!
Today IO-26 is 4 years old and all sub-systems are OK
Best wishes from the IT-AMSAT team
[ANS thanks Daniele, IK2XRO, and Piercarlo, IW2EGC,
ITMSAT Command Station for this report.]

[Please send your Satellite or News reports to ANS Editor B.J. Arts,
WT0N, via e-mail, at bjarts@the-bridge.net or to wt0n@amsat.org]
/EX

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